

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

INVENTOR(S) : Lee C. Moore
TITLE : **AUTOMATIC AND SEMI-AUTOMATIC
INDEX GENERATION FOR RASTER
DOCUMENTS**
APPLICATION NO. : 09/944,536
FILED : August 31, 2001
CONFIRMATION NO. : 3291
EXAMINER : Kumiko C. Koyama
ART UNIT : 2887
LAST OFFICE ACTION : March 5, 2010
ATTORNEY DOCKET NO. : A0A45USNP/XERZ200421US01

DECLARATION UNDER 37 C.F.R. §1.131

MAIL STOP
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

As a person signing below:

1. I, the undersigned, do hereby declare and say that I am the inventor in the above-identified United States patent application. Serial No. 09/944,536.

2. I declare that at a date prior to December 27, 2000, the U.S. filing date of United States Application Publication No. 2002/0083090 A1 by Jeffrey et al., the invention disclosed in the above-identified United States Patent Application was reduced to practice or alternatively was conceived and that there was due diligence from prior to the U.S. filing date of U.S. Patent Application Publication No.

2002/0083090 A1 until a constructive reduction to practice of the subject matter of the present application. In this regard, we have attached hereto a redacted copy of an Invention Proposal submitted to the Xerox Intellectual Property Law Department (Exhibit A) as well as redacted copies of written communications between various parties discussing aspects and progress of the drafting of the present application (Exhibits B-J), as evidence of said reduction to practice and said alternative conception of the invention prior to December 27, 2000 and due diligence from prior to that date until the filing of the present application. I hereby declare and say that the relevant portions of Exhibit A were prepared at least prior to December 27, 2000, the filing date of the Jeffrey et al. application.

3. Exhibit A indicates that it was submitted by Lee Coy Moore, the inventor in the present application. Additionally, Exhibit A carries the descriptive title: "Automatic and semi-automatic index generation for raster documents," which matches the title of the present application. In the portion of Exhibit A requesting a description of the problem, there is an indication that in a document image filing system, sheets of papers are scanned into electronic documents and that the operator can manually group the pages of a document into a hierarchy of chapters, sections, subsections, etc. Each of these units can be given a text label. The same section also indicates that there is a desire to increase the productivity of this operation by automating all or part of it. Below that portion, there is an indication that a solution is to use document recognition to find pages where chapters start and extract the chapter title. In this regard, it is noted that claim 2 of the present application recites *inter alia*: determining a subsection delimiter definition, scanning a printed version of the document to generate scan data, performing optical character recognition functions on the scan data to generate an electronic version of the document and searching the electronic version of the document for one of characters and objects corresponding to the defined subsection delimiter.

4. Additionally, the bottom portion of the first page of Exhibit A indicates that a more manual approach is to present the user with thumbnail pictures of all the pages in the document and have him or her select pages that represent chapter starts. In this regard, it is noted that claim 8 of the present application recites *inter alia*: displaying a plurality of document pages on a user interface, selecting at least

one demarcation point on at least one of the plurality of pages and using the at least one demarcation point as the defined subsection delimiter. Further in this regard, it is noted that the third page of Exhibit A includes a depiction of a display of a plurality of pages and that this page from Exhibit A is comparable to Fig. 5 of the present application.

5. The last line on the first page of Exhibit A indicates that another approach is to insert markers in the paper document to mark the chapter boundaries. In this regard, it is noted that claim 2 of the present application recites *inter alia*: determining a subsection delimiter definition...wherein determining a subsection delimiter comprises a user placing a predetermined machine-readable symbol representing a demarcation point on a printed version of the document....

6. Page 2 of Exhibit A indicates that a solution is to use document recognition to find pages where chapters start and to extract the chapter title. Exhibit A further indicates that the recognition could be driven by simple rules. A rule might be: a chapter starts on an (odd numbered) page that begins with text that is greater than or equal to 18 points. In this regard, it is noted that claim 2 recites *inter alia*: determining a subsection delimiter definition...wherein determining a subsection delimiter comprises a user indicating at least one of a font size, a font style, a text string, a text location description, and a specific point coordinate within the document....

7. The second page of Exhibit A also discusses aspects of the thumbnail display approach associated with Fig. 5 and the recitation in claim 8.

8. Page 2 of Exhibit A also indicates that an approach is to insert markers in the paper document to designate where the chapters occur. One example of a marker is a special slip-sheet that says the next page is a chapter start. This slip-sheet could have a glyph or barcode encoding on it. Alternatively, a coded sticker could be placed in the margin of a first page of each chapter. In this regard, it is noted that claim 2 recites *inter alia*: determining a subsection delimiter definition...wherein determining a subsection delimiter comprises a user placing a

predetermined machine-readable symbol representing a demarcation point on a printed version of the document.

9. Exhibit B is a redacted copy of an internal memo from the Intellectual Property Law Department to inventor Lee C. Moore indicating that a file has been established in regard to the document of Exhibit A entitled "Automatic and Semi-Automatic Index Generation for Raster Documents" (the title of the present application) and indicating that a Technical Advisory Panel and a Patent Management Committee will be considering the proposal. The date redacted from the internal memo of Exhibit B is dated a date prior to the December 27, 2000 filing date of the Jeffrey et al. application.

10. Exhibit C is a redacted copy of a Technical Advisory Panel report regarding the proposal presented in the document of Exhibit A. The report identifies Lee C. Moore as the author and makes reference to the title "Automatic and Semi-Automatic Index Generation for Raster Documents." The date redacted from the document is at least before the December 27, 2000 filing date of the Jeffrey et al. application.

11. Exhibit D is a redacted copy of an internal memo from the Intellectual Property Law Department to inventor Lee C. Moore indicating that the Patent Committee has decided that a patent application should be filed. The memo makes reference to the title "Automatic and Semi-Automatic Index Generation for Raster Documents" and associates that title with the designation D/A0A45. The date redacted from Exhibit D is at least prior to the December 27, 2000 filing date of the Jeffrey et al. application.

12. Exhibit E is a redacted copy of a letter covering the shipment of papers to support the preparation of new patent application filings. Included at the bottom of the page is a reference to the in-house docket number A0A45 of Exhibit D. The letter is evidence of a decision being reached to assign responsibility for preparation of the patent application to outside counsel. Additionally, the letter is evidence of a decision being reached to assign the responsibility for preparation of the patent application to a particular outside counsel. Exhibit E carries a handwritten, partial

outside counsel docket number 20421 in association with the in-house docket number A0A45. The letter of Exhibit E is dated April 2, 2001, and a stamp indicating the letter was received on April 3, 2001.

13. Exhibit F is a redacted copy of a letter acknowledging receipt of the letter of Exhibit E and associating outside counsel docket number XER 20421 with in-house docket number D/A0A45. Exhibit F is dated April 4, 2001.

14. Exhibit G is a redacted copy of a fax sheet covering the transmission of draft Figures to the inventor Lee Moore from the patent application drafter. The fax sheet of Exhibit G also included a password for opening a file transmitted electronically and carries outside counsel docket number XER 20421 and in-house docket number D/A0A45. Exhibit G is dated May 18, 2001.

15. Exhibit H is a redacted copy of a fax sheet covering the transmission of informal versions of Figures to a drafting department. The fax sheet carries outside counsel docket number XER 20421 and in-house docket number D/A0A45 and makes reference to inventor Lee Moore. The fax sheet is dated June 29, 2001 (6/29/01).

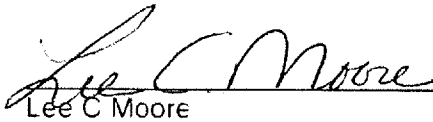
16. Exhibit I is a redacted copy of a sheet covering the delivery of a preliminary draft of formal drawings associated with in-house docket number D/A0A45 and outside counsel docket number XER 20421. The coversheet is dated July 11, 2001.

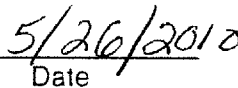
17. Exhibit J is a redacted copy of a fax sheet covering the transmission of new and updated Figures and makes reference to a new version of the application. The fax sheet is in regard to in-house docket number D/A0A45 and outside counsel docket number XER 20421. The fax sheet of Exhibit J is dated August 27, 2001. The filing date of the present application is August 31, 2001.

18. It is submitted that the information in the attached Exhibits A-J demonstrates the reduction to practice of the subject matter of the present application in the United States at a date at least prior to December 27, 2000.

Alternatively, it is submitted that the information in Exhibits A-J demonstrate the conception of the subject matter of the present application in the United States at a date at least prior to December 27, 2000 coupled with due diligence from prior to that date a constructive reduction to practice represented by the filing of the present patent application on August 31, 2001.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

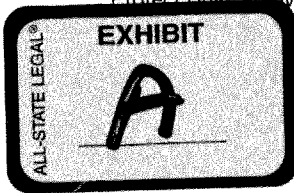

Lee C Moore


Date

Invention Proposal

RECEIVED
THE DOCUMENT COMPANY

FISCHER



Proposal Submitted By (Please use legal name) Full First Name, Middle, Last

Lee Coy Moore

ion)

natives?

Descriptive title of invention

Automatic and semi-automatic index generation for raster documents

Describe the problem How was this problem tackled before your invention?

In a document image filing system, sheets of paper are scanned into electronic documents.

the operator can manually group the pages of a document into a hierarchy of chapters, sections, sub-sections, etc. Each of these units can be given a text label. The desire is to increase the productivity of this operation by automating all or part of it.

solution is to use *document recognition* to find the pages where chapters start and extract the chapter title.

A more manual approach is to present the user with thumbnail pictures of all the pages in the document and have him/her select the pages that represent chapter starts.

Another approach is to insert markers in the paper document to mark the chapter boundaries.



Protect Until: Forever

The solution is to provide ways to make it easy to segment the document into chapters.

One solution is to use document recognition to find the pages where chapters start and to extract the chapter title. The recognition could be driven by simple rules. A rule might be: A chapter starts on an (odd numbered) page that begins with text that is greater than or equal to 18 points. Simple rules could be created with a "wizard" like interface.

A more manual approach is to present the user with thumbnail icons of all the pages in the document and have him/her select the pages that represent chapter starts. Even with thumbnail sized images, the start of chapters will often be obvious. The large leading text on the page (outside the headers and footers) will typically be the chapter title.

Another approach is to insert markers in the paper document to designate where the chapters occur. One example of a marker is a special slip-sheet that says the next page is a chapter start. This slip-sheet could have glyph or barcode encoding on it. Alternatively, a coded sticker could be placed in the margin of first page of each chapter.

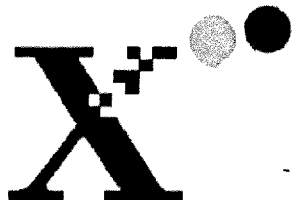
The following scanned images illustrate a couple of these points. Files 000001.tif, 000005.tif, and 000009.tif are chapter starts. They have large text on the top half of the page. Also, there is no header for these pages. The remaining page images have smaller text and do have headers. In this example, the images are placed on buttons that could be pressed to indicate the start of a chapter.

RECEIVED

Witnessed and Understood By _____

Date _____

Date _____



THE DOCUMENT COMPANY
XEROX



Internal Memo

To:
Lee C. Moore

From:

Office of General Counsel
Intellectual Property Law Department

Date:

The subject file has been established on _____ to encompass the subject matter of your invention proposal entitled **"AUTOMATIC AND SEMI-AUTOMATIC INDEX GENERATION FOR RASTER DOCUMENTS"**.

Your invention proposal, with input from the Manager's Comment Form, will be evaluated and rated by the Technical Advisory Panel (TAP). After a rating is given, I will review the entire file and make a recommendation to the Patent Management Committee



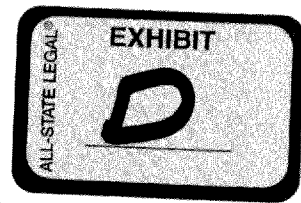
				Author(s)	Title
				Lee C. Moore	AUTOMATIC AND SEMI-AUTOMATIC INDEX GENERATION FOR RASTER DOCUMENTS

discloses the concept of using document recognition to separate a scanned document into separate directories (or other groupings) for each chapter or other document sub-group. Alternatively thumbnails of the document pages could be displayed allowing the user to click on the first page of each sub-group.

good idea.



THE DOCUMENT COMPANY
XEROX



Internal Memo

To:
LEE C. MOORE

From:

Office of General Counsel
Intellectual Property Law Dept.

Subject:
Activation :
**AUTOMATIC AND SEMI-AUTOMATIC INDEX
GENERATION FOR RASTER DOCUMENTS**
D/A0A45

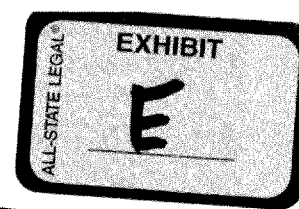
I would like to thank you for submitting this Invention Proposal to the Patent Department. The Patent Committee has decided that a patent application should be filed on this invention.

THE DOCUMENT COMPANY
XEROX

Xerox Corporation
Xerox Square
Rochester, NY 14644

Office of General Counsel

Patent Counsel
Rochester Patent Operations



RECEIVED

APR - 3 2001

FAY, SHARPE, FAGAN,
MINNICH & MCKEE, LLP

April 2, 2001

VIA AIRBORNE EXPRESS

Fay Sharpe Beall Fagan Minnich & McKee
1100 Superior Avenue, Suite 700
Cleveland, Ohio 44114-2518

Re: New Patent Application Filings

Dear Mr. Sharpe:

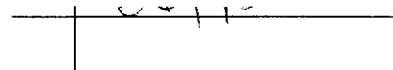
Our in-house Docket Nos., along with any special instructions, are listed below:

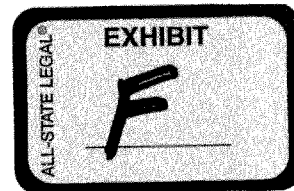
20421

A0A45



THE
DOCUMENT
COMPANY
XEROX
Worldwide Sponsor





FAY, SHARPE, FAGAN, MINNICH & MCKEE, LLP

PATENT TRADEMARK AND COPYRIGHT LAW

1100 SUPERIOR AVENUE

SEVENTH FLOOR

STEVEN M. AUUIL
MARK E. BANDY
JOSEPH D. DREHER
CHRISTOPHER B. FAGAN
JUDE A. FRY
STEVEN M. HAAS
MICHAEL E. HUDZINSKI
RICHARD M. KLEIN
THOMAS E. KOCOVSKY, JR.
SANDRA M. KOENIG

SCOTT A. MCCOLLISTER
JAMES W. MCKEE
JAY F. MOLDOVANYI
PHILIP J. MOY, JR.
TIMOTHY E. NAUMAN
PATRICK R. ROCHE
ALBERT P. SHARPE, III
R. SCOTT SPEROFF
MARK S. SVAT

CLEVELAND, OHIO 44114-2518

TELEPHONE (216) 861-5582

COLLEEN FLYNN GOSS
BRIAN E. KONDAS
JOHN P. CORNELLY
JAMES E. SCARBROUGH
ANN M. SKERRY, PH.D.
W. SCOTT HARDERS
BRIAN G. BEMBENICK
DAVID B. CUPAR
RYAN B. MCCRUM
JASON A. WORGULL
ERIK J. OVERBERGER
SCOTT C. RAND*
EDWARD T. KENNEDY
ANUJ K. WADHWA
JOSEPH E. WATERS
PATRICK D. FLOYD
OF COUNSEL
RICHARD J. MINNICH
SUE ELLEN PHILLIPS

April 4, 2001

*NOT ADMITTED IN OHIO

Patent Counsel
Rochester Patent Operations
Xerox Corporation
Xerox Square
Rochester, NY 14644

Re: New Xerox Patent Application Filings

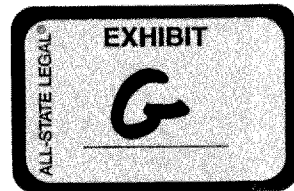
Dear

This will acknowledge receipt of your letter dated April 2, 2001

XER 2 0421

D/A0A45

FAY, SHARPE, FAGAN, MINNICH & MCKEE LLP
1100 SUPERIOR AVENUE, SEVENTH FLOOR
CLEVELAND, OHIO 44114-2518
(216) 861-5582



DATE: MAY 18, 2001
TO: XEROX
ATTENTION: LEE MOORE
FACSIMILE NO.: _____
FROM: TOM V. HANNA
RE: D/A0A45 XER20421

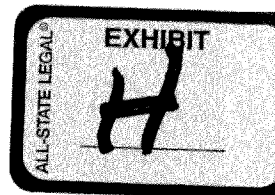
Total number of pages (including this cover sheet): 6

Please call us immediately at (216) 861-5582 if the telecopy you receive is incomplete or illegible. Our facsimile numbers are (216) 241-1666 and (216) 241-5147.

Comments:

FIGS. 1-7
PASS word

The documents accompanying this facsimile transmission include information from the firm of Fay, Sharpe, Fagan, Minnich & McKee, LLP that might be legally privileged and/or confidential. The information is intended for the use of only the individual or entity named on this cover sheet. If you are not the intended recipient, any disclosure, copying, or distribution of these documents, or the taking of any action based on the contents of this transmission, is prohibited. If you have received this transmission in error, these documents should be returned to this firm as soon as possible, and we ask that you notify us immediately by telephone so we can arrange for their return to us without cost to you.



FAY, SHARPE, FAGAN, MINNICH & MCKEE, LLP
1100 SUPERIOR AVENUE, SEVENTH FLOOR
CLEVELAND, OHIO 44114-2518
Telephone: (216) 861-5582
Facsimiles: (216) 241-1666 and (216) 241-5147

Please call us immediately at (216) 861-5582 if this transmission is incomplete or illegible.

DATE:

6/29/01

ATTENTION:

TO:

XEROX

FACSIMILE NO.:

FROM:

Tom J.

RE:

XER20921 P/A0445

Total Number of Pages (including this cover sheet) 6

Comments:

CONTACT MR. J. VANDANTON LERMOORE FOR
FURTHER CLARIFICATION IF NEEDED
10261

The documents accompanying this facsimile transmission include information from the firm of Fay, Sharpe, Fagan, Minnich & McKee, LLP that might be legally privileged and/or confidential. The information is intended for the use of only the individual or entity named on this cover sheet. If you are not the intended recipient, any disclosure, copying, or distribution of these documents, or the taking of any action based on the contents of this transmission, is prohibited. If you have received this transmission in error, these documents should be returned to this firm as soon as possible, and we ask that you notify us immediately by telephone so we can arrange for their return to us without cost to you.

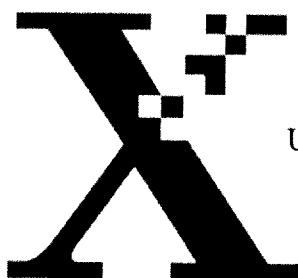
Preliminary Draft



Xerox Corporation
Xerox Square - 20A
Rochester, NY 14644

THE DOCUMENT COMPANY
XEROX

Formal Drawings for



:: Fay, Sharpe LLP / T. Tillander
D/A0A45 Ref# XER 2 0421

Art Unit:
USPTO SN#:

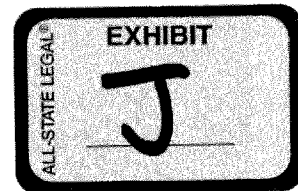
6 Sheets / 7 Figures

Drawings prepared by

July 11, 2001

Xerox Patent Graphics Department

FAY, SHARPE, FAGAN, MINNICH & MCKEE LLP
1100 SUPERIOR AVENUE, SEVENTH FLOOR
CLEVELAND, OHIO 44114-2518
(216) 861-5582



DATE: August 27, 2001
TO: XEROX
ATTENTION: LEE MOORE
FACSIMILE NO.: _____
FROM: Tom Tillander
RE: P/ADA45 XEROX 20421

Total number of pages (including this cover sheet): 4

Please call us immediately at (216) 861-5582 if the telecopy you receive is incomplete or illegible. Our facsimile numbers are (216) 241-1666 and (216) 241-5147.

Comments:

*NEW AND UPDATED FIGS to go
WITH NEW VERSION OF APP.*

A handwritten signature, likely of Tom Tillander, consisting of a stylized, cursive script.

The documents accompanying this facsimile transmission include information from the firm of Fay, Sharpe, Fagan, Minnich & McKee, LLP that might be legally privileged and/or confidential. The information is intended for the use of only the individual or entity named on this cover sheet. If you are not the intended recipient, any disclosure, copying, or distribution of these documents, or the taking of any action based on the contents of this transmission, is prohibited. If you have received this transmission in error, these documents should be returned to this firm as soon as possible, and we ask that you notify us immediately by telephone so we can arrange for their return to us without cost to you.